Van de Graff Demo**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Station 4**

**Student Handout**

**Introduction:**

A Van de Graff generator is a machine that deposits electrical charges on a rubber belt, as the rubber belt turns it re-deposits the electrical charges up in the metal ball. The accumulation of electrical charges produces a static electricity that exceeds 100,000 volts! It works a lot like scuffing your shoes on a carpet on a dry day.

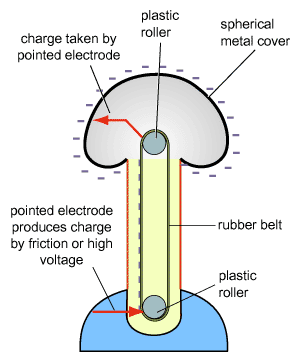
**Safety Precautions:**

1. Remove all electrical devices.

2. Do NOT create human chains.

3. Students with heart problems should not come in contact with the generator.

**Diagram:**



**Static Electricity:**

Write the three laws for static electricity; remember static electricity consists of charges trapped in a substance moving rapidly.

**1.**

**2.**

**3.**

Albert Einstein**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\_\_\_\_\_\_**

**Steps to be followed:**

**1.** In your group have a volunteer stand on top of the plastic footstool. (No volunteers? Then Barbie doesn’t mind a bad hair day)

**2.** **Before you turn the generator on,** place one hand palm down on the globe of the Van de Graaf.

**3.** **Now turn on** the Van de Graaf and wait for 1 to 2 minutes.

**Note:** Please make sure you do not remove your hand from the globe, touch anyone or step down from the footstool while the machine is running.

|  |
| --- |
| **1.** Describe what happens?  **2.** Explain which Law has been demonstrated.  **3.** Why did we use a plastic stool? |



Glowing Light **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Steps to be followed:**

1. **Turn on** the Van de Graaf generator.

2. Hold the fluorescent light tube and approach the charged Van de Graaf generator

**Note:** If possible, close the lights to see the best results.

|  |
| --- |
| 1. Describe what happens?  2. Explain which Law has been demonstrated?  3. Why did we not get electrocuted? (Hint: \_\_\_\_\_ Kills, not Voltage.) |